Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP:\_\_\_\_\_\_\_\_\_

In Class Project: Volume  
Due: April 5th

One page will be collected at random from a group member. Be sure to show work and discuss your work. You will be graded based off the problem solving criteria.

|  |
| --- |
| TASK #1: Which popcorn would you buy at the theater? Support your solution with evidence. |
| Show all work here: |
| Team members: |
| TASK #2: Would you buy the square prism? Why or why not? |
| Show all work here: |
| Team members: |

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria for Success: Use the table below to check that you met all the criteria for success. | | | |
| Criteria | Yes?  🖒 | Almost? | No?  🖓 |
| Use multiple representations   * Mathematical domain (VANG) of question is identified. * Mathematical domain (VANG) of answer is identified. * At least a third representation is present. |  |  |  |
| Connect to prior knowledge   * Giving relevant definitions or properties of math concepts. * Adding “NOT”s * Wrong answers are used as bounds for the problem. |  |  |  |
| Why > How > What   * Claim (what) is given with specific nouns used (no “it”, “this”, “those”) * Evidence (how) is present * Reasoning (why) ties together evidence, prior knowledge, and multiple representations. |  |  |  |

Brain Break!

1. What is a time you felt successful at Muchin?
2. What is a time you felt unsuccessful at Muchin?
3. What mindset did you have when you felt success?

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP:\_\_\_\_\_\_\_\_\_

Volume Explore  
Honors Geometry

Due: Wednesday April 6th, 2016

Part 1: Explaining Volume Formulas

|  |  |
| --- | --- |
| 1. What is the formula for volume of a cylinder? | 2. What is the formula for volume of a rectangular prism? |
| 3. Explain how the formula for volume of a cylinder relates to area of a circle.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.52.10 PM.png | 4. Explain how the formula for volume of a rectangular prism relates to area of a rectangle.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.52.55 PM.png |
| 5. Based off of observations from problems 3 and 4, find the volume of the triangular prism below.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.45.23 PM.png | 6. Explain how you found the volume of the triangular prism. Create your own formula. |
| 7. Solve for volume.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.45.31 PM.png | 8. Solve for volume.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.45.46 PM.png |
| 9. Solve for volume.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.45.55 PM.png | 10. Solve for volume.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.46.18 PM.png |
| 11. Challenge: What is the volume of the rectangular prism? Explain your work.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 8.47.03 PM.png | |

Part 2: Composite Volume

A composite solid is a figure that is made up of more than one solid.

The volume of a three-dimensional figure is a measure of the amount of space that it occupies. Volume is measured in cubic units (units3).



1a) What solids make up the composite solid?

1b) How can you find the volume of each solid?

1c) How can you find the volume of the composite solid?

The image below shows a rectangular prism with a rectangular prism shaped hole.



2a) How could you determine the volume of the large prism before having a hole cut from it?

2b) How could you determine the volume of the hole removed from the large prism?

2c) How could you determine the volume of the prism after having the hole removed from it?

Directions: Find the volume for each composite solid. Make sure to organize your work in order to clearly show how you derived the volume.

|  |  |
| --- | --- |
| 12) | 13) |
| 14) | 15) |
| 16) | 17) |
| 18) | 19) |
| Use the shape below to answer questions 20 and 21.  Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-04-04 at 9.17.20 PM.png  20) What is the volume of the shape?  21) What is the surface area of the shape? | | |